Cisco Compute Hyperconverged X210c M7 All NVMe Node

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Product overview

Cisco and Nutanix have partnered to introduce the industry's first hyperconverged solution using a modular blade architecture. The Cisco Compute Hyperconverged X-Series System solution combines the operational simplicity of the Nutanix Cloud Platform with the flexibility and efficiency of the award-winning Cisco UCS® X-Series Modular System, enabling organizations to easily deploy, scale, and upgrade hyperconverged clusters with a more sustainable, future-ready solution.

The Cisco Compute Hyperconverged X-Series System simplifies your data center, adapting to the unpredictable needs of modern applications while also providing for traditional scale-out and enterprise workloads. It reduces the number of server types to maintain, helping to improve operational efficiency and agility as it helps reduce complexity. Powered by the Cisco Intersight® cloud-operations platform, it shifts your thinking from administrative details to business outcomes—with hybrid-cloud infrastructure that is assembled from the cloud, shaped to your workloads, and continuously optimized.

Cisco Compute Hyperconverged x210c M7 All NVMe node

Main features

The Cisco Compute Hyperconverged X210c M7 All NVMe Node delivers performance, flexibility, and optimization for deployments in data centers, in the cloud, and at remote sites. This enterprise-class server offers market-leading performance, versatility, and density without compromise for workloads. Up to eight hyperconverged nodes can reside in the 7-Rack-Unit (7RU) Cisco Compute Hyperconverged X9508 Chassis, offering one of the highest densities of compute, I/O, and storage per rack unit in the industry.

The Cisco Compute Hyperconverged X210c M7 All NVMe Node provides these main features:

- **CPU:** up to 2x 5th Gen* or 4th Gen Intel® Xeon® Scalable Processors with up to 64 cores per processor and up to 320 MB of Level-3 cache per CPU

- **Memory:** up to 8 TB of main memory with 32x 256 GB DDR5 5600 MT/s* or DDR5 4800 MT/s DIMMs depending on the CPU installed

- **Storage:** up to six hot-pluggable Non-Volatile Memory express (NVMe) 2.5-inch drives with passthrough controllers, up to two M.2 SATA drives with hardware RAID

- mLOM Virtual Interface Cards (VICs):

  ◦ Cisco UCS VIC 15420 occupies the server's modular LAN on motherboard (mLOM) slot, enabling up to 50 Gbps of unified fabric connectivity to each of the chassis's Intelligent Fabric Modules (IFMs) for 100 Gbps connectivity per server.

  ◦ Cisco UCS VIC 15231 occupies the server's modular LAN on motherboard (mLOM) slot, enabling up to 100 Gbps of unified fabric connectivity to each of the chassis's Intelligent Fabric Modules (IFMs) for 100 Gbps connectivity per server.

  ◦ Cisco UCS VIC 15230 occupies the server's modular LAN on motherboard (mLOM) slot, enabling up to 100 Gbps of unified fabric connectivity to each of the chassis's Intelligent Fabric Modules (IFMs) for 100 Gbps connectivity per server with secure boot technology.

- Optional mezzanine card:

  ○ Cisco UCS 5th Gen Virtual Interface Card (VIC) 15422 can occupy the server's mezzanine slot at the bottom rear of the chassis. This card's I/O connectors link to Cisco UCS X-Fabric technology. An included bridge card extends this VIC's 2x 50 Gbps of network connections through IFM connectors, bringing the total bandwidth to 100 Gbps per fabric (for a total of 200 Gbps per server) with secure-boot technology.

  ○ Cisco UCS PCI Mezz card for X-Fabric can occupy the server's mezzanine slot at the bottom rear of the chassis. This card's I/O connectors link to Cisco UCS X-Fabric modules and enable connectivity to the Cisco UCS X440p PCIe Node.

  ○ All VIC mezzanine cards also provide I/O connections from the X210c All NVMe node to the X440p PCIe Node.

- **GPUs:** the X440p PCIe Node is a PCIe resource node to integrate into the Cisco Compute Hyperconverged X-Series System. The X440p PCIe Node supports two x16 full-height, full-length dual-slot PCIe cards, or four x8 full-height, full-length single-slot PCIe cards and requires both 9416 X-Fabric modules for PCIe connectivity. This provides up to 16 GPUs per chassis to accelerate your applications with the X440p nodes.

- **Security:** the server supports an optional Trusted Platform Module (TPM). Additional features include a secure boot FPGA and ACT2 anti-counterfeit provisions.

*Roadmap

Software and management:

Cisco [Intersight](#) simplifies infrastructure operations across on-premises data centers, edge sites, and public clouds. Intersight Managed Mode (IMM) is a newer architecture that manages the Cisco UCS fabric interconnected systems through a Redfish-based standard model. In this mode, the X210c M7 All NVMe nodes are connected to a pair of Cisco UCS 6400 series or a pair of Cisco UCS 6500 series fabric interconnects and managed by Intersight. The minimum number of nodes required is three with fabric interconnect configurations for hyperconverged clusters. The primary use case is for general purpose workloads and missions and critical/high performance workload deployments in the data center. For edge and branch use cases and deployments, there is a [single-node cluster](#) and a two-node cluster option available as well with Cisco Compute [Hyperconverged X-Series Direct](#).

Nutanix Cloud Platform software: The Nutanix Cloud Platform (NCP) offering includes various software packages in multiple editions (Starter, Pro, and Ultimate) to meet customer's infrastructure needs with the right set of capabilities.

- Nutanix Cloud Infrastructure (NCI) is a complete software stack to unify your hybrid-cloud infrastructure including compute, storage and network, hypervisors, and containers, in public or enterprise clouds.

- Nutanix Cloud Manager (NCM) software allows enterprises to build, use, operate, and govern their applications and IT infrastructure by offering intelligent operations, including monitoring, insights, and automated remediation. Self-service and orchestration capabilities help to streamline team tasks for scaling applications in a hybrid-cloud environment.

- Desktop services offer hybrid-cloud infrastructure capabilities for on-premises Virtual Desktop Infrastructure (VDI) and Desktop-as-a-Service (DaaS) use cases.

- Nutanix Unified Storage (NUS) is a software-defined data-services platform that consolidates file, object, and block storage services. Built on top of Nutanix Cloud Platform, NUS is built for scale and performance with a rich set of advanced data services. NUS offers agility, flexibility, and simplicity in deploying and managing modern applications and services at the core, in the cloud, or at the edge.

Hypervisor: the Cisco Compute Hyperconverged X210c M7 All NVMe node supports Nutanix Acropolis Hypervisor (AHV) and VMware vSphere hypervisors.

Benefits

Since we first delivered the Cisco Unified Computing System™ (Cisco UCS) in 2009, our goal has been to simplify the data center. We pulled management out of servers and into the network. We simplified multiple networks into a single unified fabric. And we eliminated network layers in favor of a flat topology wrapped into a single unified system. With the Cisco Compute Hyperconverged X-Series System, we take that simplicity to the next level:

- Simplified operations with a solution that combines the operational simplicity of hyperconverged software with the efficiency and flexibility of a modular system.

- Increased agility and response to the dynamic needs of your business with a solution that is inherently easy to scale and includes support for future generations of processors, storage, accelerators, networking technologies, and SaaS innovations.

- Improved sustainability with a solution that is engineered to be more energy efficient and can be easily upgraded and reused, lowering the consumption of power and raw materials when compared to traditional rack servers.

Product specifications

Table 1.   Product specifications

Item	Specifications
Processors	Up to 2x 5th Gen Intel Xeon Scalable Processors (1 or 2) [roadmap] or Up to 2x 4th Gen Intel Xeon Scalable Processors (1 or 2)
Memory	32 DDR5-5600 DIMM slots (16 DIMMS per CPU): 16, 32, 48, 64, 96, 128, 256 GB at up to 5,600 MT/s for up to 8 TB of memory with 5th Gen Intel Xeon Scalable Processors* or 32 DDR5-4800 DIMM slots (16 DIMMS per CPU): 16, 32, 64, 128, 256 GB at up to 4,800 MT/s for up to 8 TB of memory with 4th Gen Intel Xeon Scalable Processors
mLOM	mLOM slot for VIC 15420, VIC 15231, or VIC 15230
Mezzanine adapter (rear)	15422 mezzanine card with VIC 15000 bridge connector compatible with VIC 15420
Mezzanine module (front)	Front mezzanine module options: • Cisco FlexStorage NVMe passthrough controller (for NVMe drives only) • No front mezzanine

Item	Specifications
Internal storage	Front mezzanine storage options: - Following drive options are available for X210c All NVMe node: - 1.9 TB, 3.8 TB, 7.6 TB, and 15.3 TB NVMe disks (up to 6 NVMe drives per node) Drives require passthrough controller in the front mezzanine module slot. Boot drive options: - Mini-storage module with 2x M.2 (up to 48 0GB per drive) SATA drives with hardware RAID for hypervisor boot
GPUs	- NVIDIA H100 Tensor Core GPU (dual slot) - NVIDIA L40S GPU (dual slot) - NVIDIA L4 Tensor Core GPU (single slot) - NVIDIA A16 GPU (dual slot)
Riser options	- Riser A for 1x dual-slot GPU per riser - Riser B for 2x single-slot GPUs per riser
Management	- [Cisco Intersight software (SaaS, virtual appliance, and private virtual appliance)](#)
Temperature: operating	50° to 95°F (10° to 35°C)
Temperature: nonoperating	–40° to 149°F (–40° to 65°C)
Humidity: operating	5% to 90% noncondensing
Humidity: nonoperating	5% to 90% noncondensing
Altitude: operating	0 to 10,000 ft (0 to 3000m); maximum ambient temperature decreases by 1°C per 300m
Altitude: nonoperating	40,000 ft (12,000m)

*Roadmap

System requirements

Table 2.   System requirements

Item	Requirements
X-Series chassis	Cisco Compute Hyperconverged X9508 Chassis
Fabric interconnect	6454, 64108, and 6536 fabric interconnects
X-Fabric modules	9416 X-Fabric Modules for Cisco Compute Hyperconverged X9508 Chassis
Cisco Intersight	Intersight Managed Mode (minimum Essentials license per server)

Ordering information

Table 3 provides ordering information for the Cisco Compute Hyperconverged X210c M7 All NVMe Node.

Table 3. Ordering information

Part number	Description
HCIX-M7-MLB	Cisco Compute Hyperconverged X-Series M7 with Nutanix MLB
HCIX-210C-M7	Cisco Compute Hyperconverged X210c M7 Node w/o CPU, memory, storage, mezzanine
HCIX-210C-M7-U	Cisco Compute Hyperconverged X210c M7 Node UPG w/o CPU, memory, storage, mezzanine
HCIX-210C-M7-CH	DISTI: Cisco Compute Hyperconverged X210c M7 Node w/o CPU, memory, storage, mezzanine

For information about installing or upgrading your server, see the Hardware Installation Guide.

For ordering information, see the Cisco Compute Hyperconverged X210x M7 All NVMe Node spec sheet and Cisco Compute Hyperconverged X-Series M7 with Nutanix MLB ordering guide.

Warranty information

The Cisco Compute Hyperconverged X210c Node has a three-year Next-Business-Day (NBD) hardware warranty and a 90-day software warranty.

Augmenting the Cisco Unified Computing System warranty, Cisco Smart Net Total Care® and Cisco Solution Support services are part of Cisco's technical services portfolio. Cisco Smart Net Total Care combines Cisco's industry-leading and award-winning foundational technical services with an extra level of actionable business intelligence that is delivered to you through the smart capabilities in the Cisco Smart Net Total Care portal. For more information, please refer to https://www.cisco.com/c/en/us/support/services/smart-net-total-care/index.html.

Cisco Solution Support includes both Cisco® product and solution-level support, resolving complex issues in multivendor environments on average 43 percent more quickly than with product support alone. Cisco Solution Support is a critical element in data-center administration, helping rapidly resolve issues encountered while maintaining performance, reliability, and return on investment.

This service centralizes support across your multivendor Cisco environment for both our products and solution partner products that you have deployed in your ecosystem. Whether there is an issue with a Cisco product or with a solution partner product, just call us. Our experts are the primary point of contact and own the case from first call to resolution. For more information, please refer to https://www.cisco.com/c/en/us/services/technical/solution-support.html.

Product sustainability

Information about Cisco's Environmental, Social, and Governance (ESG) initiatives and performance is provided in Cisco's CSR and sustainability reporting.

Table 4.   Cisco environmental sustainability information

Sustainability topic		Reference
General	Information on product-material-content laws and regulations	Materials
	Information on electronic waste laws and regulations, including our products, batteries, and packaging	WEEE Compliance
	Information on product takeback and reuse program	Cisco Takeback and Reuse Program
	Sustainability inquiries	Contact: csr_inquiries@cisco.com
Material	Product packaging weight and materials	Contact: environment@cisco.com

Product environmental information

Product environmental information for users per Commission Regulation (EU) 2019/424 https://www.cisco.com/web/dofc/23906228.pdf.

Cisco and Partner services

Cisco and our industry-leading partners deliver services that accelerate your transition to a Cisco Compute Hyperconverged X-Series System solution. Cisco Unified Computing Services can help you create an agile infrastructure, accelerate time to value, reduce costs and risks, and maintain availability during deployment and migration. After deployment, our services can help you improve performance, availability, and resiliency as your business needs evolve and help you further mitigate risk. For more information, visit https://www.cisco.com/go/unifiedcomputingservices.

Cisco Capital

Flexible payment solutions to help you achieve your objectives

Cisco Capital® financing makes it easier to get the right technology to achieve your objectives, enable business transformation, and help you stay competitive. We can help you reduce total cost of ownership, conserve capital, and accelerate growth. In more than 100 countries, our flexible payment solutions can help you acquire hardware, software, services, and complementary third-party equipment in easy, predictable payments. Learn more.

Document history

New or revised topic	Described in	Date
*5th Gen Intel Xeon Scalable Processors and DDR5 5600 MT/s DIMMs support	Table1: Product specification	Target time frame Q3CY'24